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Schools." It is the official organ of the American-Nature-Study Society. It is excellent for teachers of Nature Study, and for the parent who wishes to help his children in something which need guidance. It was published as a bi-monthly at first, but has since gone over into monthly publication, save for the three school-less summer months. The first volume contained articles upon the aims and methods of teaching Nature-Study, news notes and notes on recent articles. All of the material was concise, brief, and of course non-literary. There were also a few book reviews included in the early numbers. The first volume contained an article by Dr. J. M. Coulter, Liberty Bailey, of Cornell, C. F. Hodge, then of Clark University, and M. A. Bigelow. This recognition by scientific men of the values of such a society as this, is worth noting. But the magazine has changed its character. Under the leadership of its present editor, Mrs. Anna B. Comstock, it has become more nearly suited to the children's needs. It includes animal outlines to be colored, delightful little articles upon habits of birds, animals, essays of interest upon plants, appreciations of Thoreau, Burroughs, Audubon, Agassiz, and others. It includes bits of poetry, seldom chosen from the great poets, but verse which has rhythmic and imageryic value. Throughout the pages is a contagious enthusiasm which counts for more than any other factor in any such publication.

(CONCLUSION NEXT ISSUE.)

Plants of Fargo, North Dakota, With Dates of Flowering.—I.*

O. A. STEVENS.

This paper is similar to one published in this journal (vol. 5) dealing with those of Blue Rapids and Manhattan, Kansas. Compared with that list, the present one has the advantage of a longer and more recent (yet scarcely intensive) period of study (1910 to 1920 inclusive). It deals, also, with a more restricted and less varied area. The same system of indicating the date of first flowering is used, i. e., of dividing the month into 5-day periods, adding in parenthesis the exact average date where records of three or more years are available and in reasonable agreement.

* Contribution from Dept. Botany, North Dakota Agricultural College and Experiment Station.

The area considered is roughly that of 4 or 5 miles radius about the City of Fargo, one-half of it thus being in Minnesota adjacent to the City of Moorhead. The general topography may be described very briefly. The bed of glacial Lake Agassiz, which is said to be perhaps the most nearly level large area of land in the world, is, at this point, about 40 miles in width, extending 15 miles to the east and 25 to the west. The soil is a black, fine-grained, heavy loam, poorly drained and frequently with slightly, lower areas too wet for regular cultivation.

A belt of timber covers the banks of the Red River of the North. Commonly this is but a few rods in width, but frequent bends result in somewhat larger areas. White elm, green ash, and box elder predominate, with basswood on some of the lower portions and burr oak on the higher. An occasional bit of aspen, cut off as it were from the Minnesota forest some 50 miles eastward furnishes various species not elsewhere found. One such area several miles in length on the east side of the river about 3 miles north, adds a number of plants to this list.

Excepting for some of the lower portions above mentioned, the land is nearly all under cultivation and of the original prairie only scattered fragments and the roadsides remain. Frequency in such habitat will therefore be understood as applying to such portions of prairie as are yet to be found. In the gravel used for ballast on the railroad tracks a number of plants common to the higher prairies have become established to various degrees.

In preparing this list the writer has made use of one compiled several years ago by Mr. C. H. Waldron to whom credit is due for various contributions. The notes on distribution and abundance are based upon personal observations, species upon which such are not available remaining on authority of the collector as shown in the herbarium of the North Dakota Agricultural College. Early in 1920 the writer examined the herbarium carefully for Fargo specimens and found that some sixty species were not represented. The greater part of these were secured during the season and the remainder will be secured the coming season if possible.

The nomenclature and arrangement of Bergman's *Flora of North Dakota* (Sixth Bienn. dept., Agric. Coll. Survey) have been followed although not always in accord with the writer's ideas or latest usage. With regard to common names, some attempt has been made to supply suitable ones where they seemed lacking and

such as the writer is more or less responsible for in this or earlier publications are indicated by an asterisk (*). As he has previously stated (Science, N. S. 45:502), he considers that common names are of necessity more or less local, and that different plants may bear the same name in separated regions. Qualifying adjectives may not be needed where related species are absent.

Ranunculaceæ. Butter-cup Family.

- Actaea rubra* (Ait.) Willd. BANEBERRY.
Woods. Frequent. May 25. The white and red fruited forms are not regarded as different species.
- Aquilegia canadensis* L. COLUMBINE.
Woods. Occasional. May 25 (24).
- Delphinium penardi* Huth. PRAIRIE LARKSPUR.
Prairie. Occasional. July 5 (3).
- Anemone cylindrica* A. Gray. *COTTON WEED.
Prairie. Frequent. June 15.
- Anemone virginiana* L. TALL ANEMONE.
Woods. Occasional. June 10.
- Anemone canadensis* L. CANADA ANEMONE.
Prairie on lower places. Common. June 5 (5).
- Anemone quinquefolia* L. WOOD ANEMONE.
Aspen woods on the Minnesota side. May 10 (9).
- Pulsatilla hirsutissima* (Pursh) Britton. PASQUE FLOWER.
Reported to have been found, but not seen in recent years and no specimen in the herbarium. Apr. 15. Commonly called "Crocus."
- Clematis virginiana* L. VIRGIN'S BOWER.
Woods and thickets. Frequent. Aug. 5.
- Ranunculus delphinifolius* Torr. YELLOW WATER CROWFOOT.
In water. Occasional. May 25.
- Ranunculus ovalis* Raf. PRAIRIE BUTTERCUP.
Prairie. Common. Apr. 20 (21).
- Ranunculus abortivus* L. KIDNEY-LEAVED BUTTERCUP.
Woods. Common. May 10 (8); excluding an extremely early date—Apr. 10, 1910.
- Ranunculus sceleratus* L. DITCH BUTTERCUP.
Margins of ponds, etc. Common. May 30 (31).
- Ranunculus acris* L. TALL BUTTERCUP.
An introduced weed collected in 1892 and 1910, but apparently has not become established.

- Ranunculus pennsylvanicus* L. f. BRISTLY BUTTERCUP.
 Sloughs. Frequent. Apparently no record of flowering but it is late, perhaps first of Aug.
Tilia americana L. BASSWOOD LINDEN.
 Woods of river. Common.

Malvaceae. Mallow Family.

- Malva rotundifolia* L. MALLOW. CHEESES.
 Near railway tracks (Stevens in 1915.)
Malva borealis Wallm. *NORTHERN MALLOW.
 Yards, roadsides, etc. Common. June 25 (26).
Malva sylvestris L. HIGH MALLOW.
 Various places. Occasional.
Hibiscus trionum L. FLOWER-OF-AN-HOUR.
 Gardens. Occasional.

Hypericaceae. St. John's-wort Family.

- Hypericum perforatum* L. COMMON ST. JOHN'S-WORT.
 Collected by C. H. Waldron in 1911.

Elatinaceae. Water-wort Family.

- Elatine triandra* Schk. MUD PURSLANE.
 Mud in dried up ponds. Occasional.

Violaceae. Violet Family.

- Viola papilionacea* Pursh. COMMON BLUE VIOLET.
 Woods, thickets and low prairie. Common. May 5 (7).
Viola sororia Willd. HAIRY BLUE VIOLET.
 Dry open woods and thickets. Frequent.
Viola pedatifida G. Don. PRAIRIE VIOLET.
 Prairie. Common. May 20 (21).
Viola pubescens Ait. YELLOW VIOLET.
 Woods. Common. May 5 (7).
Viola rugulosa Greene. CANADA VIOLET.
 Woods. Common. May 5 (5).
Viola conspersa Reich.
 Wet places in aspen woods on Minnesota side. May 5.

Oxalidaceae. Wood Sorrel Family.

- Oxalis violacea* L. VIOLET WOOD SORREL.
 Prairie, fields and roadsides. Common. May 25 (23).

Oxalis stricta L. YELLOW WOOD SORREL.

Fields and roadsides. Common. June 10.

Oxalis cymosa Small. *SMOOTH YELLOW SORREL.

Oxalis cymosa Small. SMOOTH YELLOW SORREL.

Fields or along ditches and thickets. I have no careful records to show whether or not this flowers at the same time as the preceding, but believe there is little if any difference.

Linaceae. Flax Family.

Linum usitatissimum L. COMMON FLAX.

Roadsides. Frequent. June 20.

Linum lewisii Pursh. PERENNIAL FLAX.

Collected by C. B. Waldron in 1890.

Linum sulcatum Riddell. *SMALL-FLOWERED YELLOW FLAX.

Prairie. Common.

Linum rigidum Pursh. *LARGE-FLOWERED YELLOW FLAX.

Collected by Lee in 1891. June 15.

Geraniaceae. Geranium Family.

Geranium maculatum L. WILD CRANE'S BILL.

Aspen woods on Minnesota side. Occasional.

Geranium carolinianum L.

Roadsides, especially by the aspen woods.

Geranium pusillum L. SMALL CRANESBILL

Lawns, introduced with white clover. Occasional.

Erodium cicutarium (L.) L'Her. ALFILARIA

Collected by C. H. Waldron in 1910.

Balsaminaceae. Jewel-Weed Family.

Impatiens pallida Nutt. PALE TOUCH-ME-NOT

Woods. Occasional.

Rutaceae. Rue Family.

Xanthoxylum americanum Mill. PRICKLY ASH

Woods Frequent. May 15 (16).

Euphorbiaceae. Spurge Family.

Euphorbia glyptosperma Engelm.

Along railroad. Stevens and C. H. Waldon in 1911.

Euphorbia serpyllifolia Pers. FIVE-LEAVED SPURGE,

Fields and roadsides. Common. June 10 (11).

- Euphorbia maculata* L. SPOTTED SPURGE.
 Along railroad. C. H. Waldron in 1910.
Euphorbia esula L. LEAFY SPURGE.
 Fields. Frequent. June 15.
Euphorbia missouriensis (Norton) Small.
 Ditch near Co. Hosp. Brenckle & Stevens in 1914.

Callitrichaceae. Water-star-wort Family.

- Callitriche palustris* L. WATER-STAR-WORT.
 Collected by Wright in 1891.

Caryophyllaceae. Pink Family.

- Agrostemma githago* L. CORN COCKLE.
 Roadsides and fields. Occasional. June 15.
Silene antirrhina L. SLEEPY CATCHFLY.
 Roadsides and fields. Occasional. June 20 (20).
Silene noctiflora L. NIGHT-FLOWERING CATCHFLY.
 Fields and roadsides. Common. June 25.
Vaccaria vaccaria (L.) Britton. PINK COCKLE.
 Fields and roadsides. Frequent. June 15.
Alsine media L. COMMON CHICKWEED.
 Shaded dooryards and woods. Common.
Alsine longifolia (Muhl.) Britton. LONG-LEAVED CHICKWEED.
 Woods. Frequent.
Alsine longipes (Goldie) Coville.
 Collected by Bolley in 1891.
Cerastium vulgatum L. MOUSE-EAR CHICKWEED.
 Lawns. Occasional.
Cerastium arvense L. *PRAIRIE CHICKWEED
 Prairie and in gravel along railroad. Frequent. May 15 (14).
Moehringia lateriflora (L.) Fenzl.
 Woods and thickets. Frequent. Occasional along railroad
 May 25 (23).
Spergula arvensis L. CORN SPURREY.
 Lee in 1892, L. B. Waldron in 1903.

Portulacaceae. Purslane Family.

- Portulaca oleracea* L. PURSLANE.
 Gardens and fields. Common. June 20.

Aizoaceae. Carpet Weed Family.

Mollugo verticillata L. CARPET WEED.

A single plant collected along the railroad by myself in 1910 but the specimen seems to have been lost.

Chenopodiaceae. Goosefoot Family.

Chenopodium album L. LAMBSQUARTERS.

Fields, roadsides etc. Common. June 20 (22).

Chenopodium leptophyllum (Moq.) Nutt.

NARROW-LEAVED GOOSEFOOT.

Occasional along railroad.

Chenopodium boscianum Moq.

Woods. Frequent.

Chenopodium hybridum L. MAPLE-LEAVED GOOSEFOOT.

Woods, thickets, or about buildings. Frequent.

Chenopodium glaucum L. PALE GOOSEFOOT.

Low, alkaline spots. Frequent. Aug. 15.

Chenopodium rubrum L. RED GOOSEFOOT.

Weedy sloughs or waste places. Frequent. Aug. 25.

Chenopodium botrys L. JERUSALEM OAK.

Along railroad (C. H. Waldron in 1910); also seen by myself in 1918.

Cycloloma atriplicifolium (Spreng.) Coult. TUMBLEWEED.

C. H. Waldron, also H. F. Bergman in 1910.

Monolepis nuttalliana (R. & S.) Greene.

Along railroad. Frequent. May 20.

Atriplex hastata L. *SALT BUSH.

Roadsides, fields, etc. in low alkaline places. Common. Aug. 10.

Axyris amaranthoides L. RUSSIAN PIGWEED.

Along railroad, Stevens in 1912.

Kochia scoparia Schrad. BURNING BUSH.

Frequently escaped along streets.

Corispermum villosum Rydb. HAIRY BUGSEED.

Along railroad, Stevens in 1910.

Dondia depressa (Pursh) Britton. SEA BLITE.

Low alkaline places. Occasional.

Salsola kali L. RUSSIAN THISTLE.

Railroad embankments, roadsides, near buildings, or other places where the soil is loose and dry. Common.

Amaranthaceae. Pigweed Family.

Amaranthus retroflexus L. ROUGH PIGWEED.

Fields and roadsides. Common. July 5 (4).

Amaranthus blitoides S. Wats. *CREEPING PIGWEED.

Especially along walks, yards, roadsides, etc. Common. June 15 (16).

Amaranthus graecizans L. *TUMBLING PIGWEED.

Roadsides and waste places. Frequent.

Acnida tamariscina Moq. WATER HEMP.

Low fields and ditches. Occasional Aug. 5.

Allioniaceae. Four o'clock Family.

Allionia myctaginea Michx. *WILD FOUR O'CLOCK.

Fields and roadsides. Common. June 15 (14).

Allionia hirsuta Pursh. HAIRY FOUR O'CLOCK.

Along railroad. Frequent.

Salicaceae. Willow Family.

Salix amygdaloides Anders. PEACH-LEAVED WILLOW.

River bank. Common. May 15 (15).

Salix interior Rowlee. SAND-BAR WILLOW.

River bank and low ground in various places. Common. May 25 (23).

Salix petiolaris Smith.

Low roadsides and swampy places. Occasional.

Salix cordata Muhl.

River bank and other low places. Frequent. Apr. 30 (27).

Salix discolor Muhl.

Low places. Occasional. Apr. 25 (23).

Salix bebbiana Sarg.

Low places. Occasional.

Populus balsamifera L. BALSAM POPLAR.

May occur with *tremuloides* but I was unable to verify it the past season. May 5.

Populus deltoides Marsh. COTTONWOOD.

Rare except as planted. Apr. 25 (25).

Populus tremuloides Michx. ASPEN.

Occasional small patches on this side of river. A strip on Minnesota side extends for several miles northward. Apr. 20 (21), excluding an extremely early date—Mar. 27, 1910.

Urticaceae. Nettle Family.

Urtica gracilis Ait. NETTLE.

Woods, thickets, roadsides. Common. July 5.

Urticastrum divaricatum (L.) Kuntze. WOOD NETTLE.

Woods. Common. July 10.

Pilea pumila (L.) A. Gray. CLEARWEED.

River bank. Occasional.

Cannabinaceae. Hemp Family.

Humulus lupulus L. HOP.

Woods and thickets. Common. June 30.

Cannabis sativa L. HEMP.

Occasionally escaped along roadside.

Ulmaceae. Elm Family.

Ulmus americana L. WHITE ELM.

Woods. Common. Apr. 20 (20); excluding Mar. 28, 1910.

Ulmus fulva Michx. RED ELM.

Said to occur at least on the Minnesota side but I have been unable to verify it.

Celtis occidentalis L. HACKBERRY.

Woods. Frequent.

Polygonaceae. Buckwheat Family.

Rumex acetosella L. *SORREL DOCK.

Roadsides. Occasional. June 5. We have been using this common name which seems more appropriate than the usual Field or Sheep Sorrel (the latter so commonly applied to *Oxalis violacea*).

Rumex mexicanus Meisn. WILLOW-LEAVED DOCK.

Low places, fields, and roadsides. Common. June 5 (7).

Rumex occidentalis S. Wats. WESTERN DOCK.

Drainage ditch 2 mi. north (Stevens in 1920).

Rumex crispus L. CURLED DOCK.

Low roadsides. Frequent.

Rumex persicarioides L. GOLDEN DOCK.

Low ground. Common. June 30.

Polygonum aviculare L. KNOTWEED-DOORWEED.

Yards, roadsides etc. Common. May 30.

Polygonum erectum L. UPRIGHT KNOTWEED.

Roadsides etc. Common. June 10.

Polygonum ramosissimum Michx. BUSHY KNOTWEED.

Roadsides, etc. Common.

(TO BE CONTINUED)